

STAGE
1

Sounds All Around



by Wendy Pfeffer • illustrated by Holly Keller

Be sure to look for all of these books in the Let's-Read-and-Find-Out Science series:

STAGE 1

The Human Body:

How Many Teeth?
I Can Tell by Touching
I'm Growing!
Look at Your Eyes
My Feet
My Five Senses
My Hands
On the Move
Sleep Is for Everyone

Plants and Animals:

Animals in Winter
Baby Whales Drink Milk
Big Tracks, Little Tracks
Fireflies in the Night
From Caterpillar to Butterfly
From Tadpole to Frog
How a Seed Grows
A Nest Full of Eggs
A Safe Home for Manatees
What Color Is Camouflage?
What Lives in a Shell?
What's Alive?
What's It Like to Be a Fish?
Where Are the Night Animals?

The World Around Us:

Air Is All Around You
The Big Dipper
Snow Is Falling
Sounds All Around
What Makes a Shadow?

STAGE 2

The Human Body:

A Drop of Blood
Ears Are For Hearing
Germs Make Me Sick!
The Skeleton Inside You
What Happens to a Hamburger
Your Skin and Mine

Plants and Animals:

Ant Cities
Be a Friend to Trees
Chirping Crickets
Corn Is Maize
Ducks Don't Get Wet
Elephant Families
Falcons Nest on Skyscrapers
How Do Apples Grow?
How Do Birds Find Their Way?
Look Out for Turtles!
Milk From Cow to Carton
An Octopus Is Amazing
Our Puppies Are Growing
Snakes Are Hunters
Sponges Are Skeletons
Who Eats What?
Why Do Leaves Change Color?
Zipping, Zapping, Zooming Bats

Dinosaurs:

Digging Up Dinosaurs
Dinosaur Bones
Dinosaurs Are Different
Fossils Tell of Long Ago
My Visit to the Dinosaurs
What Happened to the Dinosaurs?

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Floating in Space
The Moon Seems to Change
The Planets in Our Solar System
The Sky Is Full of Stars
What Makes Day and Night
What the Moon Is Like

Weather and the Seasons:

Down Comes the Rain
Feel the Wind
Flash, Crash, Rumble, and Roll
Tornado Alert
What Will the Weather Be?

Our Earth:

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Earthquakes
Follow the Water from Brook to Ocean
How Mountains Are Made
How We Learned the Earth Is Round
Let's Go Rock Collecting
Oil Spill!
Volcanoes
You're Aboard Spaceship Earth


The World Around Us:

Day Light, Night Light
Switch On, Switch Off
What Makes a Magnet?
Where Does the Garbage Go?
What Is the World Made Of?

Sounds All Around



by Wendy Pfeffer • illustrated by Holly Keller

 HarperCollinsPublishers

For Sally, Milt, and Ad, who filled my childhood with happy sounds
—W.P.

For Jill, with thanks
—H.K.

With special thanks to Dr. John M. Sooy at Rowan University for his expert advice.

The illustrations in this book were created with pen and ink, watercolors, and pastels on Rives BFK paper.

The *Let's-Read-and-Find-Out Science* book series was originated by Dr. Franklyn M. Branley, Astronomer Emeritus and former Chairman of the American Museum-Hayden Planetarium, and was formerly co-edited by him and Dr. Roma Gans, Professor Emeritus of Childhood Education, Teachers College, Columbia University. Text and illustrations for each of the books in the series are checked for accuracy by an expert in the relevant field. For more information about *Let's-Read-and-Find-Out Science* books, write to HarperCollins Children's Books, 10 East 53rd Street, New York, NY 10022, or visit our web site at <http://www.harperchildrens.com>.

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SOUNDS ALL AROUND

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Sounds All Around



Snap your fingers. Clap your hands. Whistle!
Clatter some pans. You're making sounds!



Crinkle-crunch through dry leaves.



Splish-splash in a puddle.



Make happy sounds!



HA HA

Sad sounds!



WAAH

Scary sounds!



BOO

Mad sounds!



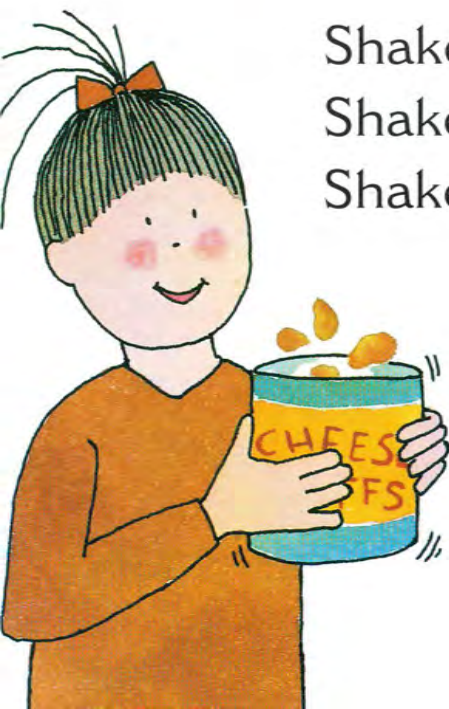
Grrrrr

Shake a can of marbles . . . rattle, rattle, rattle.

Shake a can of cheese puffs . . . pluff, pluff, pluff.

Shake a can of pencils . . . clank, clank, clank.

Your sounds fill the air.

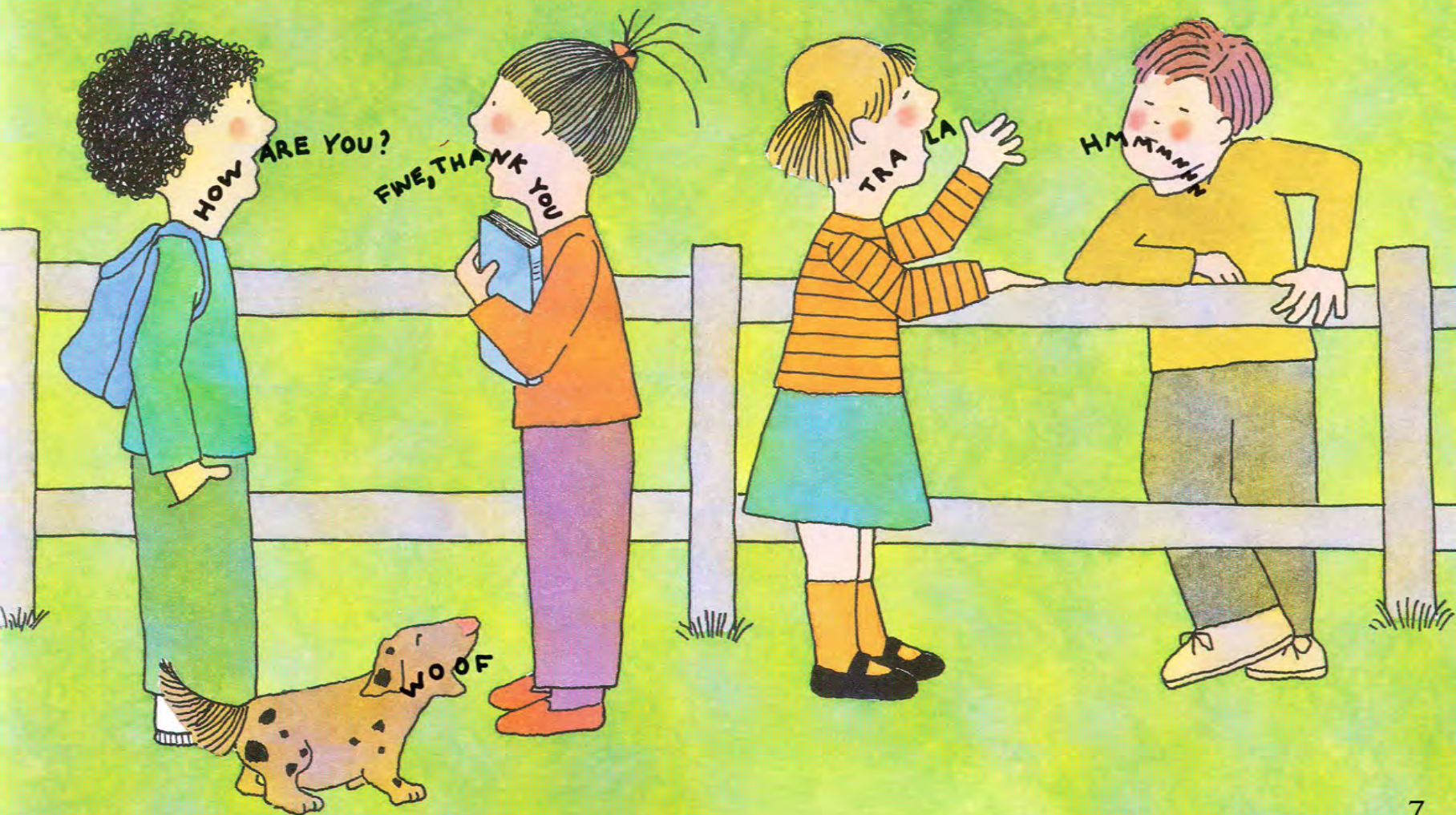


PLUFF
PLUFF



CLANK
CLANK

Make more sounds. Sing. Talk. Hum. These sounds come out of your mouth, but they start in your throat.



Feel your throat as you sing, talk, or hum.
Your fingertips tingle because your vocal cords
shake to make sounds.

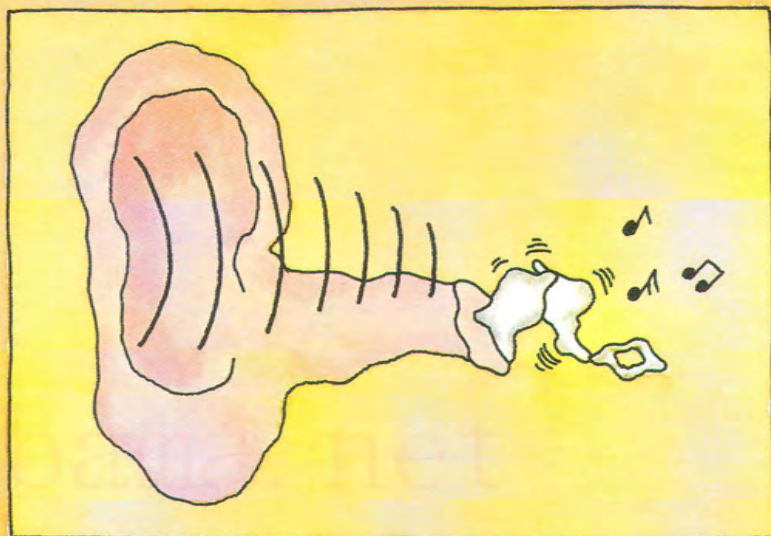
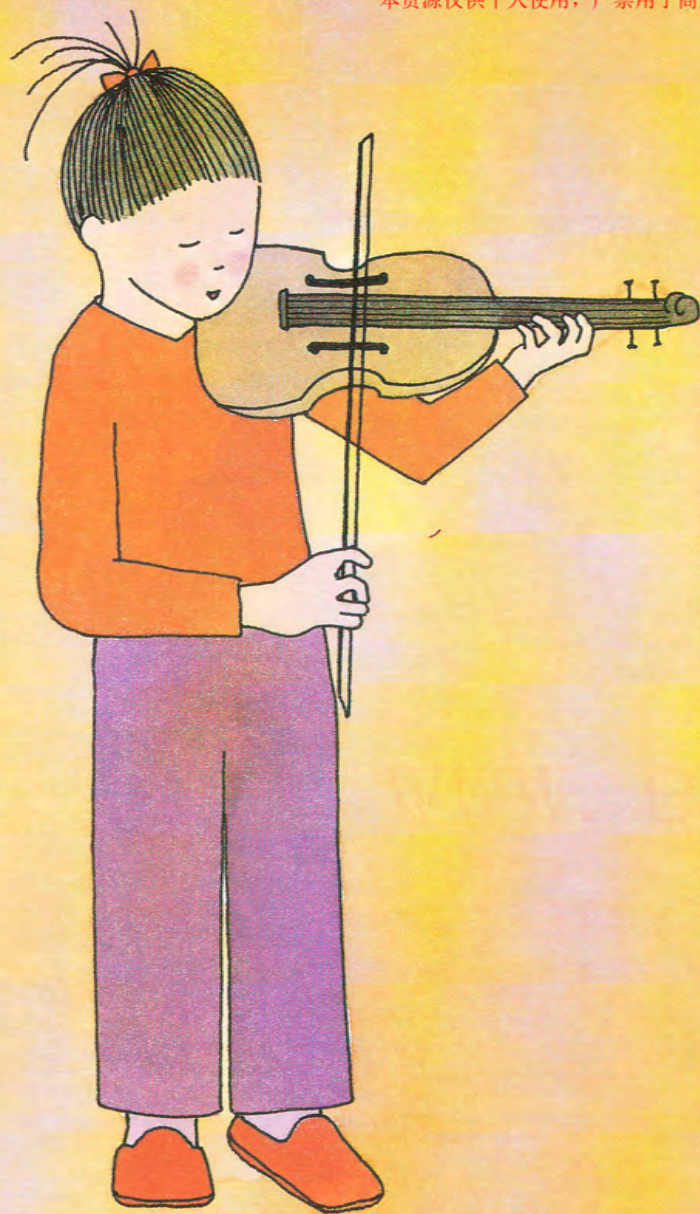


They shake back and forth very fast.
This is called vibrating.
And that makes the air around them vibrate.
These vibrations move through the air in waves
called sound waves.

Now, be quiet. Feel your throat. Your vocal
cords are still.

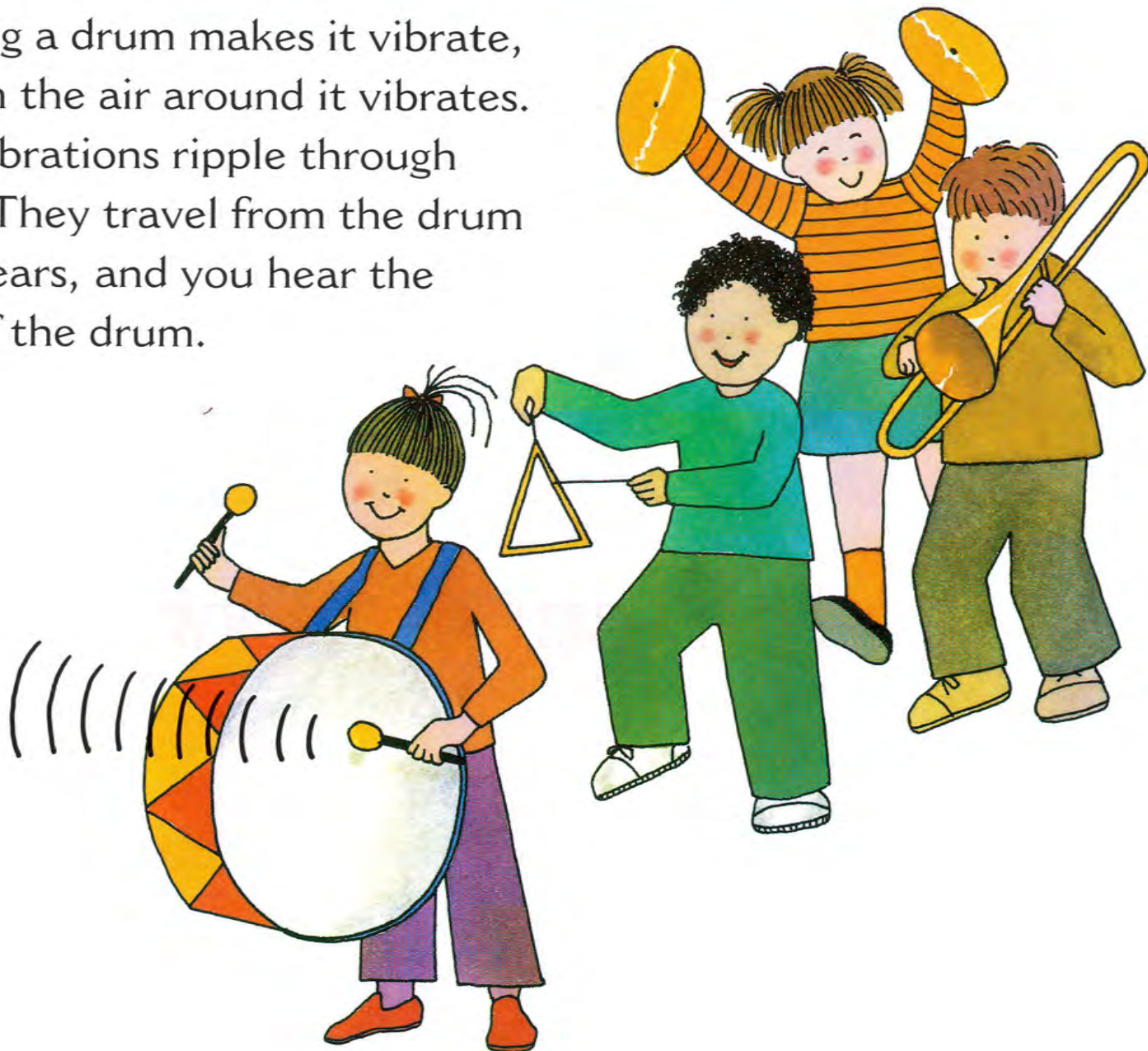
They're not vibrating, so there's no sound.

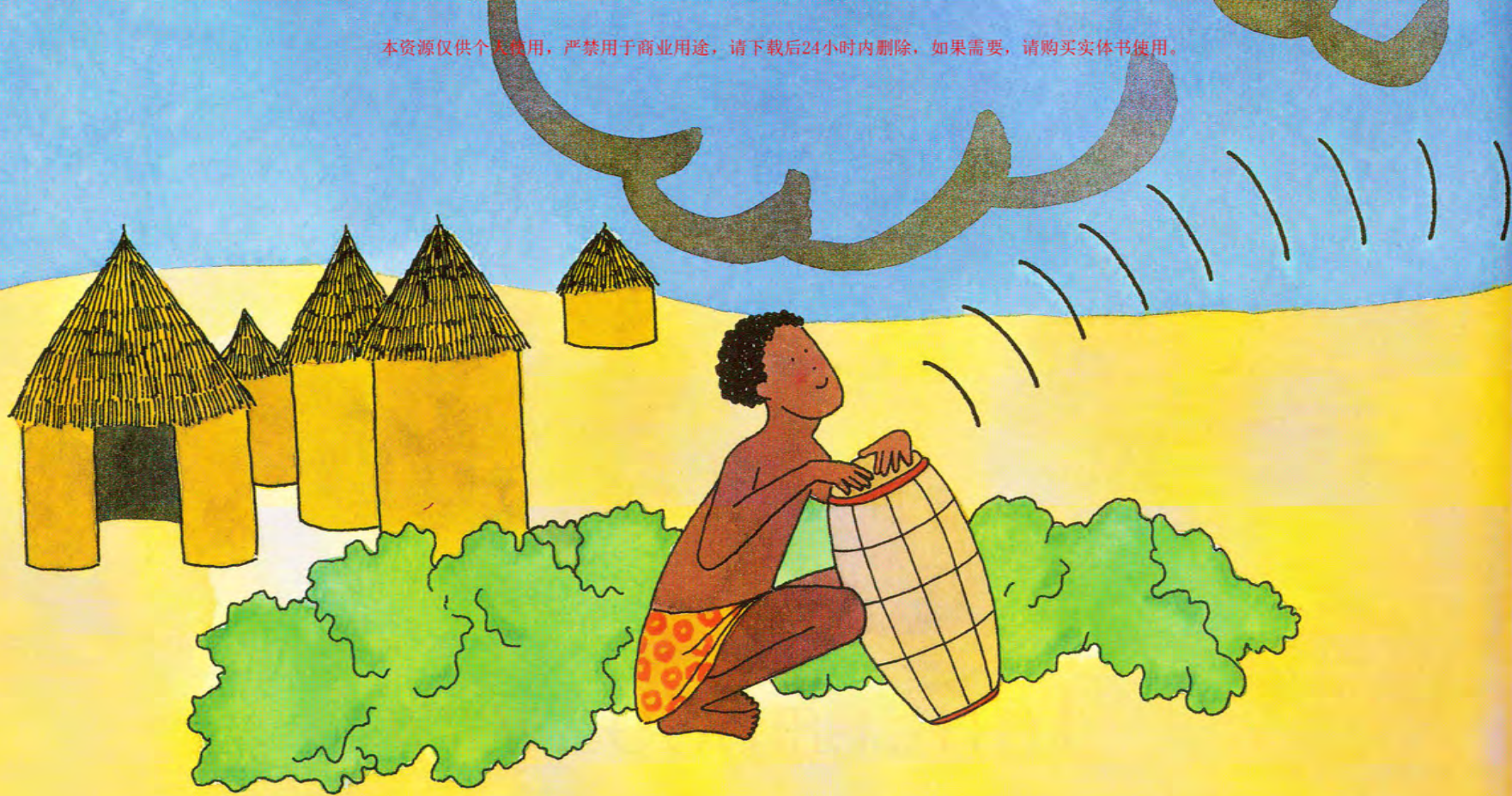




You can't see sound waves,
but when they reach your ear,
tiny bones in your ear vibrate.
Then you hear the sound.

Beating a drum makes it vibrate, and then the air around it vibrates. These vibrations ripple through the air. They travel from the drum to your ears, and you hear the sound of the drum.





Long ago, people used drum sounds to send messages. They beat high sounds, low sounds, fast sounds, slow sounds. These sounds traveled through the air, from village to village. Different drumbeats sent different messages, such as



Rain clouds are forming or



A new leader has been chosen.

People still use sounds to send messages.
Clapping hands says "Good job."



A knock on the door
asks "Is anyone home?"

And the siren on a fire truck
means "Get out of the way!"





CLUCK, CLUCK, CLUCK

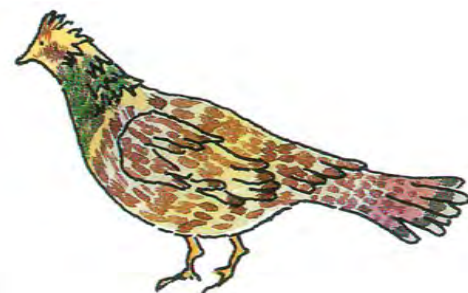
Animals use sounds to send messages, too.
A hen clucks to call her chicks.



A ruffed grouse makes
a drumming sound to
attract a mate.

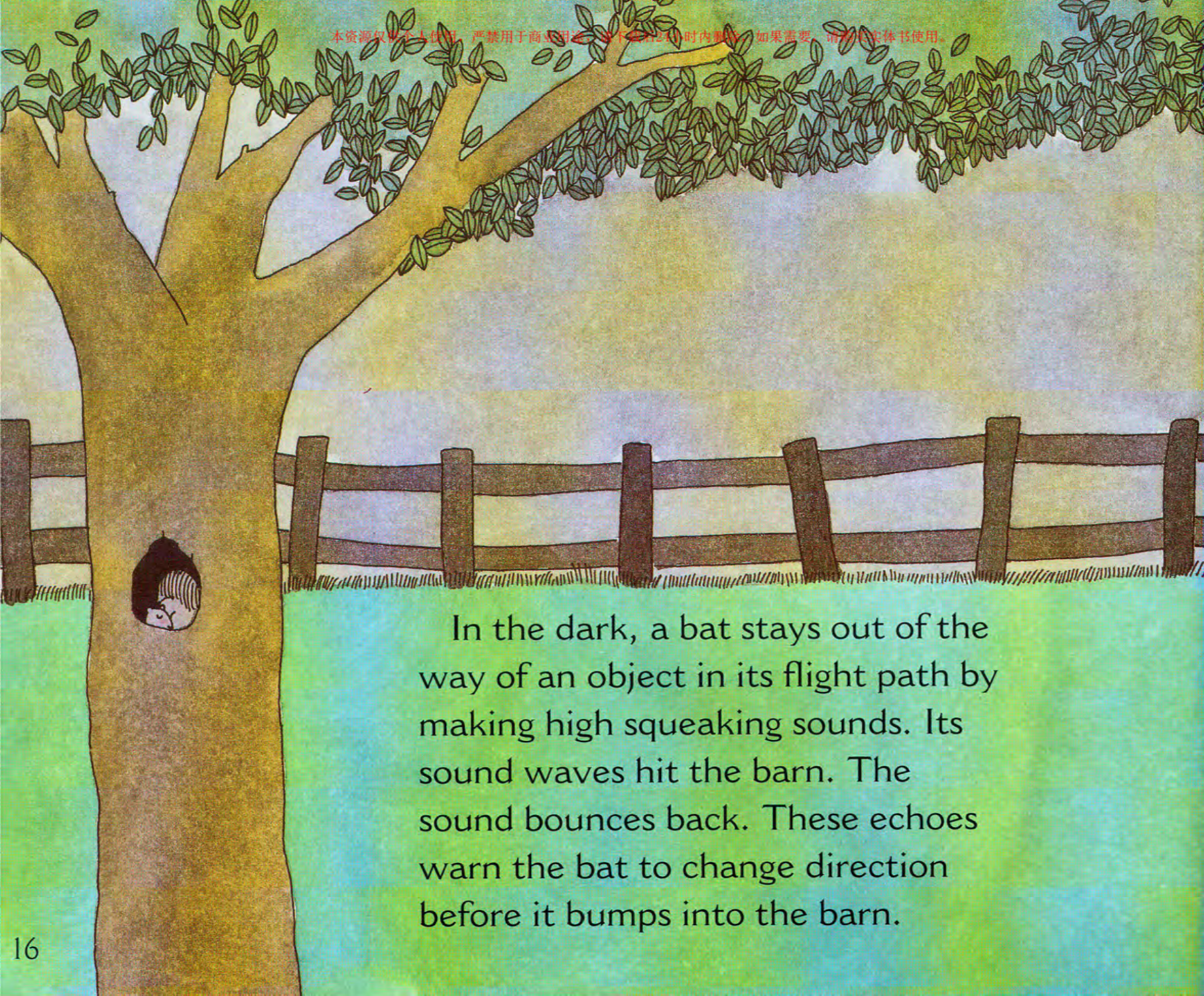


THUMP



HOWWWWL!

And a howler monkey roars to keep
other howlers out of its territory. A
howler's roar is one of the loudest animal
sounds in the world. No wonder other
howlers stay out of the way.



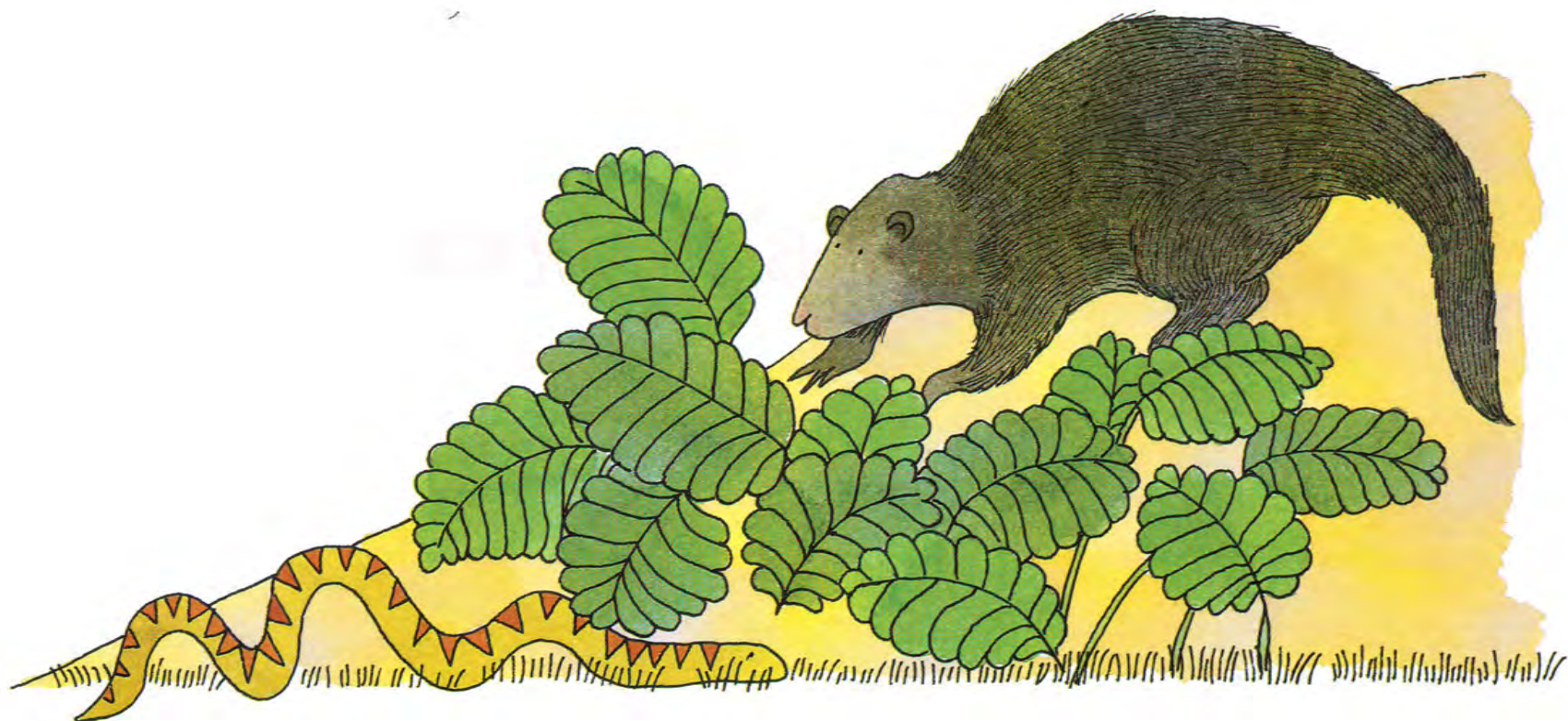
In the dark, a bat stays out of the way of an object in its flight path by making high squeaking sounds. Its sound waves hit the barn. The sound bounces back. These echoes warn the bat to change direction before it bumps into the barn.

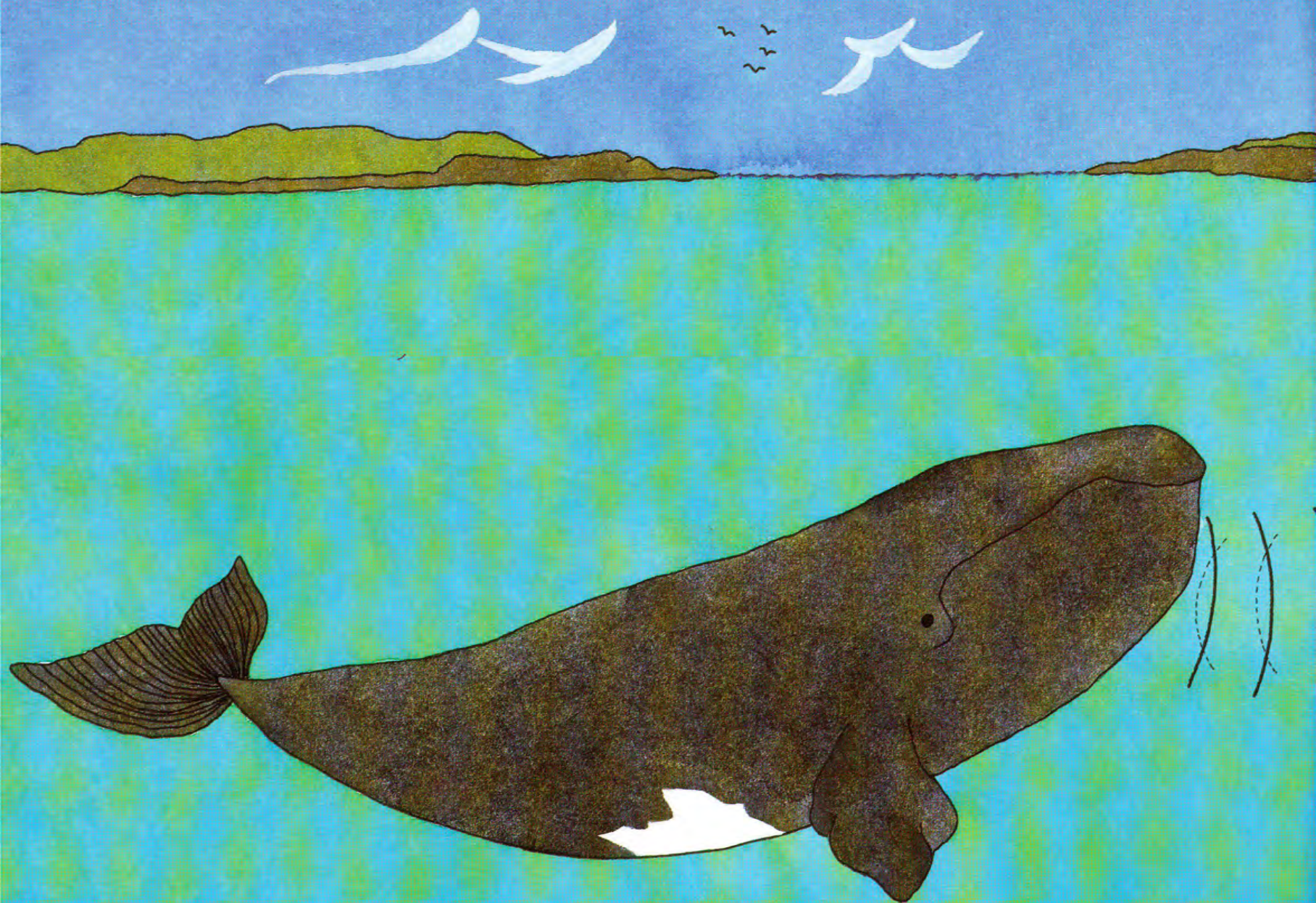


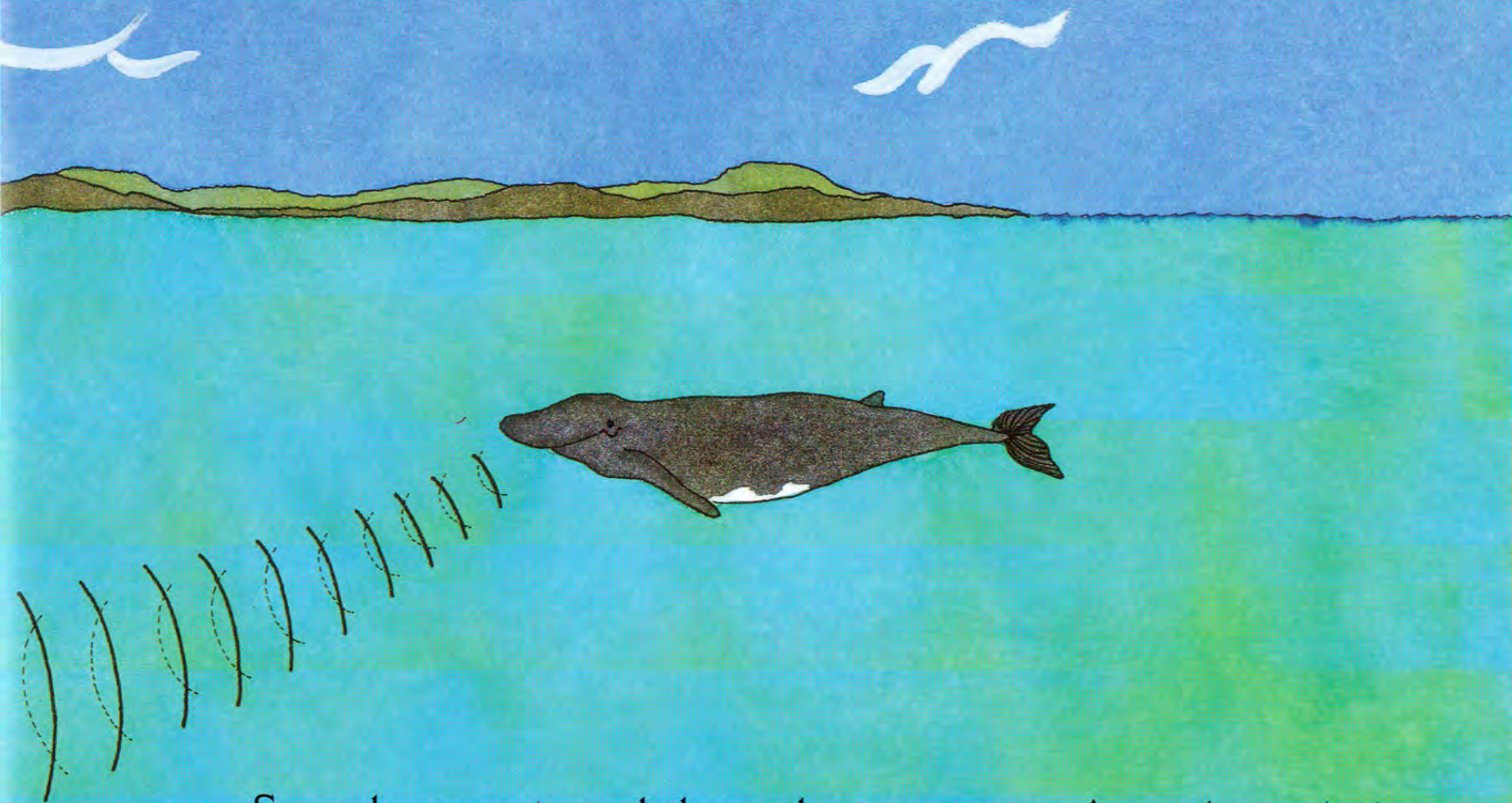


A bat finds food using echoes, too. Sound waves bounce off insects. In total darkness a bat can locate 600 insects an hour by listening for the echoes. This is called *echolocation*.

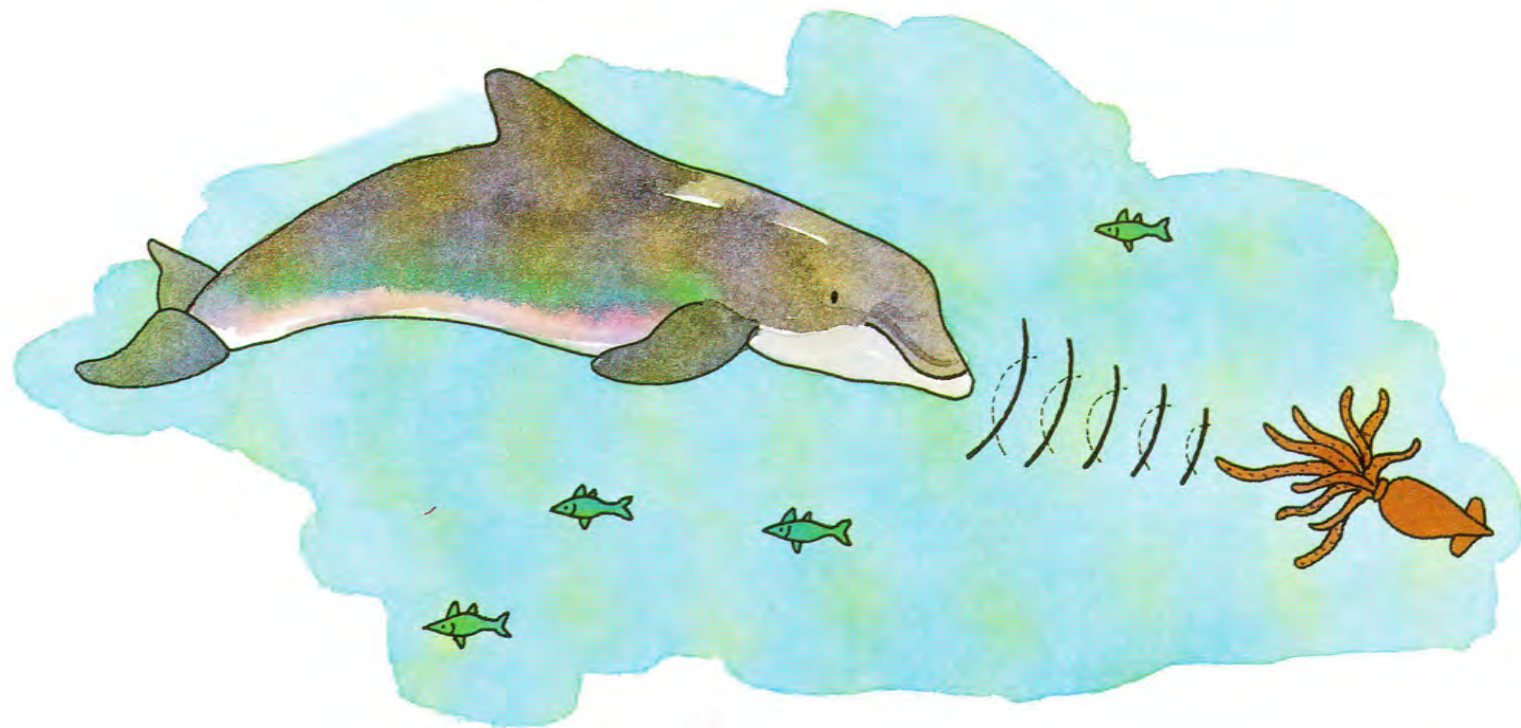
Sound waves travel through solid ground as well as air. A snake has no ears. To hear, it puts its head on the ground. A bone in its head feels the sound vibrations. They warn the snake that an enemy, maybe a mongoose, lurks nearby.







Sound waves travel through water, too. A mother whale can find her baby by sending clicking sounds through the water. When the sound waves bump into her calf, echoes bounce back. The mother whale listens. She hears the echoes and knows where her baby is.



Whales and dolphins locate objects by sending sounds through the water, then listening for the echoes.

People use a device called *sonar* to send sounds in water. When the echoes bounce back, people know how deep the water is. They also discover where submarines, shipwrecks, and schools of fish are.





Sounds are an important part of our lives.
Some sounds, like music, please us.
Some sounds, like a jackhammer, annoy us.
Some sounds are quiet. Some are loud.



How can you measure sounds?

How much you weigh is measured in pounds.

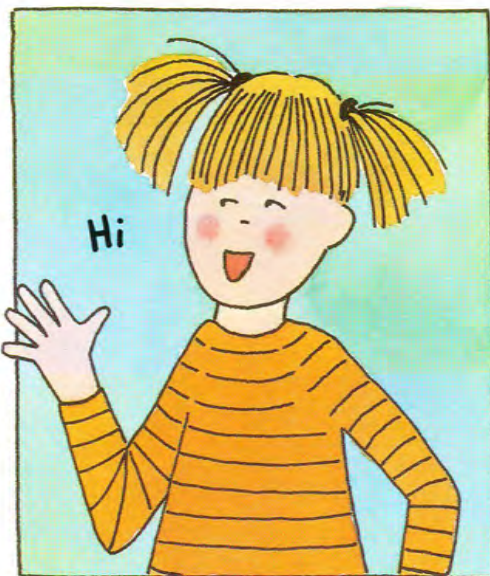
How tall you stand is measured in inches.

How loud you yell is measured in decibels.

Whisper.



Talk.



Yell.



Whisper.

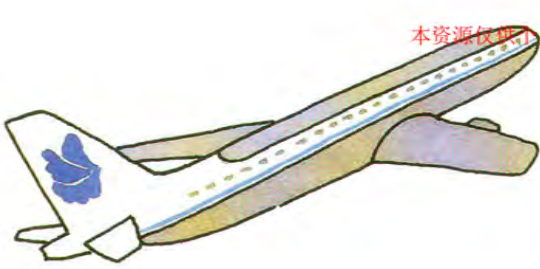
Whispering measures only about 20 decibels.

Talk.

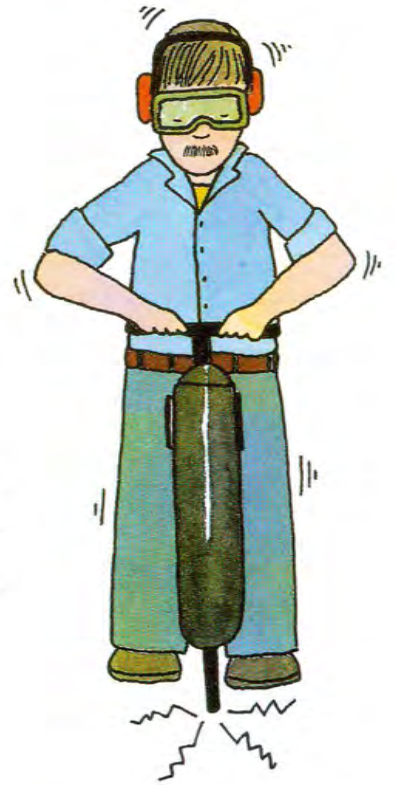
Talking measures about 50 decibels.

Yell.

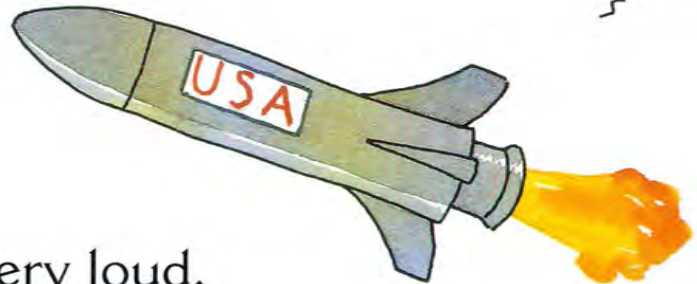
Wow! A loud yell measures about 80 decibels.

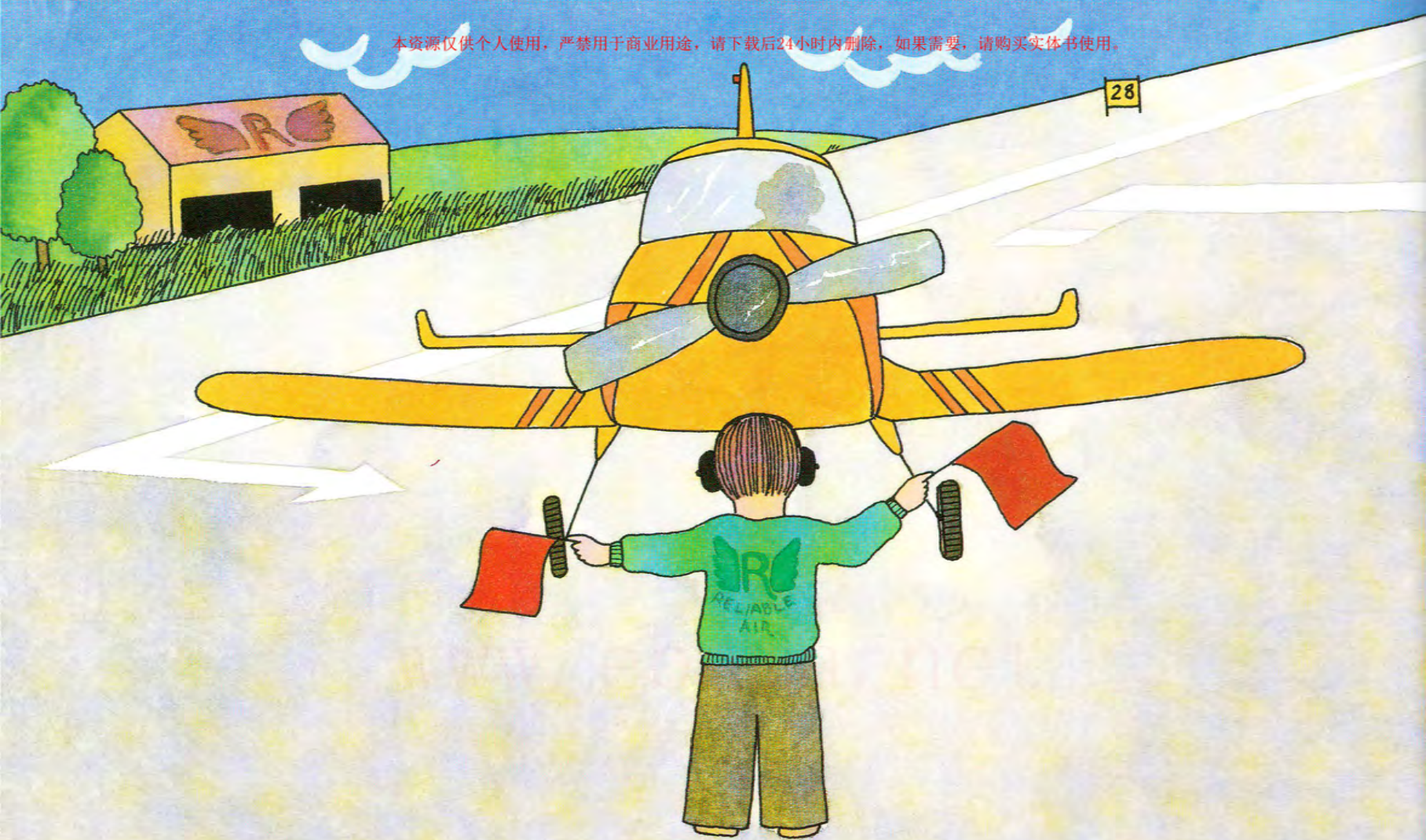


Falling leaves measure only 10 decibels.
A vacuum cleaner 70 decibels.
Loud music 90 decibels.
A jackhammer 100 decibels.
A jet engine 150 decibels.



A space rocket is very loud.
It measures 200 or more decibels.





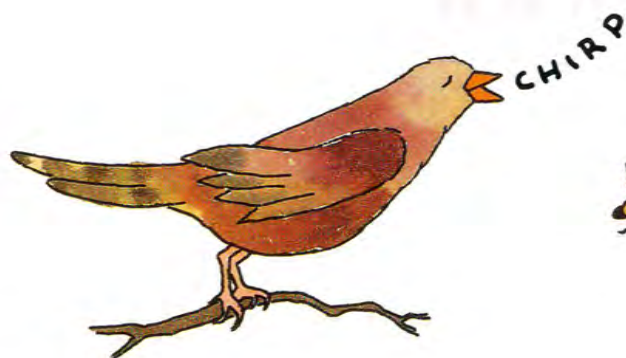
Some loud sounds can damage your ears. People who are close to airplanes or use jackhammers should protect their ears.



RUMBLE



We live in a world of sounds.
Telephones ring. Thunder rumbles.
Water gurgles. Birds chirp.
Bees buzz. Friends talk.
And we laugh, cry, hiccup, sigh.



Sounds are all around. Keep listening!



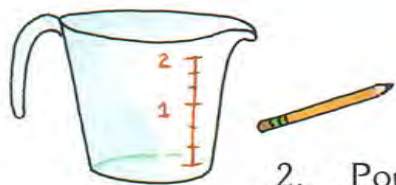
MAKE A GUITAR

1. Find an empty tissue box and six different-sized rubber bands.
2. Stretch the rubber bands over the opening in the box.
3. Pluck one rubber band. As it vibrates, listen to the sound.
4. Put your hand on the rubber band. That stops the vibrations and stops the sound.
5. Pluck a different rubber band. It sounds different from the first rubber band because its vibrations are different.
6. Pluck each of the other rubber bands. Listen to the sounds. The thicker the rubber band, the lower the sound will be.
7. Pluck each rubber band and pretend you are playing a guitar.



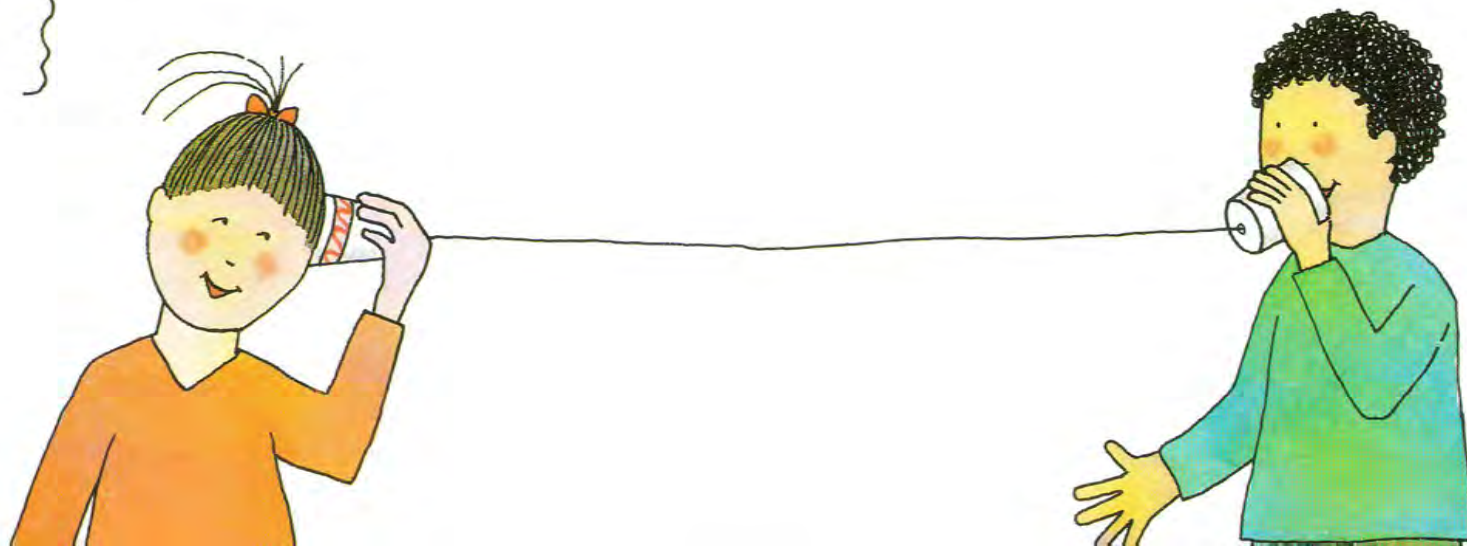
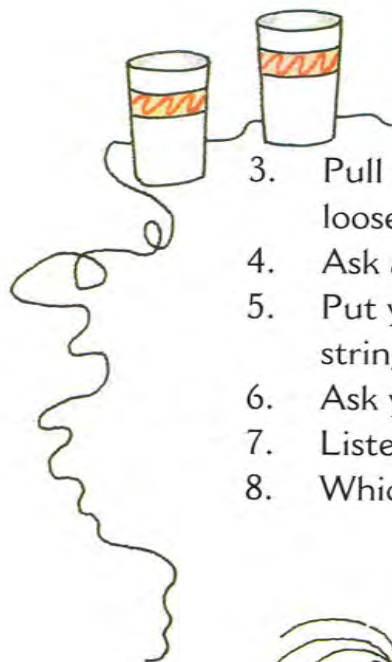
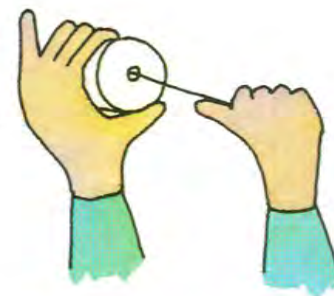
MAKE MUSICAL GLASSES

1. Ask an adult to help you gather the following:
 - eight large water glasses all the same size
 - a measuring cup
 - a pencil
2. Pour one ounce of water into the first glass, two ounces into the second glass, three ounces into the third glass, and so on until all glasses have been used.
3. Tap each glass with the pencil.
4. Listen to the sound that comes from each glass. The less water in the glass, the lower the sound will be.
5. Tap on each glass. Go up the scale. Go down the scale. Pretend you are playing a tune on a xylophone.



LISTEN TO SOUND TRAVEL THROUGH A SOLID OBJECT

1. With two paper cups and about ten feet of string, make a string telephone.
2. Attach the string to each cup. Here's how:
Put a hole in the bottom of each cup.
Put the string through each hole.
Tie knots in the ends of the string inside each cup to keep the string ends from coming out.
3. Pull the string tight between the cups. The sound stops if the string is loose and cannot vibrate.
4. Ask a friend to whisper into one cup.
5. Put your ear to the other cup and listen. The sound travels through the string, a solid object.
6. Ask your friend to whisper again without using the "telephone."
7. Listen. That sound travels through the air.
8. Which carried your friend's whisper better, the string or the air?



FIND OUT MORE ABOUT SOUND

LISTEN TO SOUNDS AROUND YOU

- Listen in the house. Do you hear a clock ticking, the television blaring, someone laughing? What else do you hear?
- Listen on the front steps. Do you hear a dog barking, a ball bouncing, a horn honking? What else do you hear?
- What could you hear: On a farm? During a storm? In the forest? Near the ocean? By a brook? At the zoo? In the supermarket?

LISTEN TO SOUND TRAVEL THROUGH WATER

- In the bathtub keep your ears above the water. Knock your knuckles underwater on the side of the tub. Can you hear the knocking sound?
- Lie on your back with your ears under the water. Knock underwater again. Can you hear the sound travel through water? Which knocking sounded louder?

SOUNDS MATCHING GAME

- Setting Up:
 1. Collect ten identical containers with lids—such as peanut cans.
 2. With Magic Markers put a red X on five cans. Put a blue X on the other five.
 3. Put an equal amount of marbles into one red can and one blue can. Fill other pairs with paper clips, cotton, pennies, and rice.
 4. Place the red cans together and the blue cans together.
- Game Rules:
 1. The first player shakes a red can, then a blue can. If both cans make the same sound, the player keeps the pair. If not, the cans must be returned.
 2. Take turns. After a match is made, the player should guess what is in each can before opening it.
 3. The player with the most pairs wins. Add other pairs to make the game more challenging.

Wendy Pfeffer enjoyed early careers as a teacher and a nursery school director. She now devotes her time to writing and conducting workshops on creative writing. Her other books for children include the Let's-Read-and-Find-Out Science books FROM TADPOLE TO FROG and WHAT'S IT LIKE TO BE A FISH?, also illustrated by Holly Keller.

Ms. Pfeffer lives in Pennington, New Jersey.

Holly Keller has illustrated a number of books in the Let's-Read-and-Find-Out Science series, including LET'S GO ROCK COLLECTING by Roma Gans and YOU'RE ABOARD SPACESHIP EARTH by Patricia Lauber. She is also the author and illustrator of HORACE and GERALDINE'S BABY BROTHER.

Ms. Keller lives in West Redding, Connecticut.



ACTIVITIES
INSIDE!

LET'S READ AND FIND OUT ABOUT

Sound

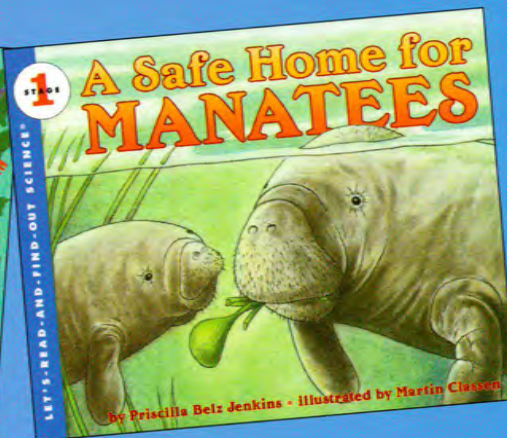
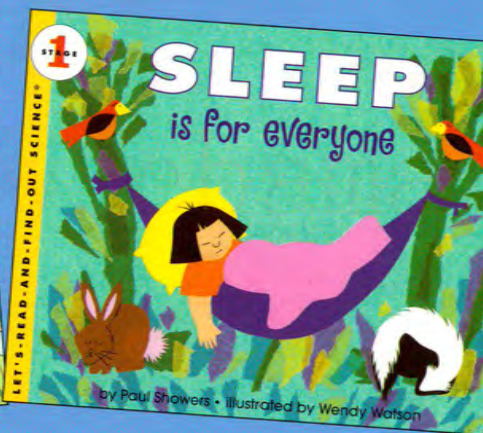
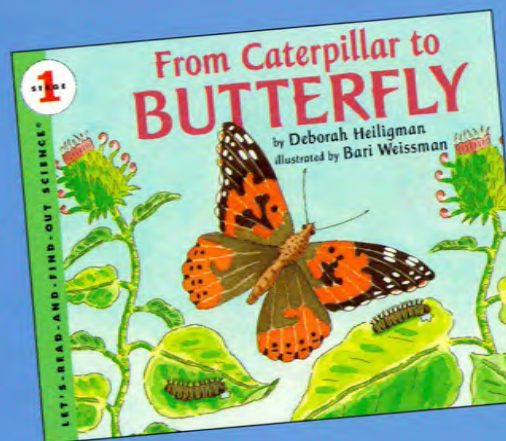


Sounds are all around us.

Clap your hands, snap your fingers: You're making sounds.

Read and find out how people and animals use different kinds of sounds to communicate.

Other Stage 1 books you might enjoy:



Introduce basic science concepts to young children and help satisfy their curiosity about how the world works.

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